

REMARKS/ARGUMENTS

Claims 1-14 are amended; Claims 60-62 are new.

Amended Claims 1-14 are supported at the correspondingly numbered original or previously presented claims. New Claims 60-62 are supported at previously presented Claim 10.

No new matter is added.

The indefiniteness rejection is traversed. Claim 10 is amended to remove instances of double inclusion. The Office asserts the terminology “PAA 18K, PAA 8K, PAA 5K, PAA 4K and PAA 3K,” found in Claims 1 and 10, is indefinite.¹ The Office is incorrect. The above-described terminology constitutes ‘terms of art’ that are instantly recognizable and known to one of ordinary skill; definitions for these terms are downloadable from the Polymer Standards Service website.² The subject matter embraced by the claims is therefore clear, and Applicants have not otherwise indicated that they intend the invention to be of a scope different from that defined in the claims, so the claims comply with 35 U.S.C. § 112, second paragraph.³ Withdrawal of the rejection is requested.

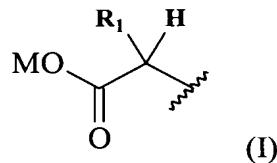
The obviousness rejection based on Suau is traversed. Suau does not describe or suggest all of the features of Claim 1 and the claims depending therefrom.

¹ See Official Action pages 2-3.

² See <http://www.polymer.de/index.php?id=search&L=0>.

³ See M.P.E.P. § 2173.04.

The Claim 1 homopolymer and/or copolymer is terminated at a chain end by a group of formula (I):



wherein R_1 is an alkyl radical having 1 to 10 carbon atoms or an aromatic radical that is optionally substituted by an alkyl chain having 1 to 4 carbon atoms; and M is a hydrogen atom, an amine salt, ammonium or an alkaline cation. The Office acknowledges Suau does not disclose this claim feature.⁴ Suau's homopolymer or copolymer, contrastingly, is terminated by a $-C(O)OM$ group arising from Suau's employment of a xanthate salt chain transfer agent.⁵ Suau does not describe or suggest⁶ every feature of present Claim 1 and the claims depending therefrom, so these claims are not obvious in view of Suau. Withdrawal of the obviousness rejection is requested on this basis alone.

Nevertheless, the Office asserts that based on structural similarity alone,⁷ the Claim 1 polymer or homopolymer is obvious in view of Suau. In Takeda, the Federal Circuit held that in order to make a *prima facie* case of obviousness, in addition to structural similarity, a showing that the “prior art would have suggested making the specific molecular modifications necessary to achieve the claimed invention” was also required.⁸ The Office has not made the required showing under Takeda, so the obviousness rejection is improper. Withdrawal of the obviousness rejection is requested on this basis alone.

⁴ See Official Action page 6.

⁵ See Suau, column 4, lines 4-11, 21-29, and 61-63, and Example 1, columns 7-8.

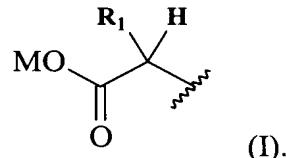
⁶ “Obviousness requires a suggestion of all limitations in a claim.” See CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing In re Royka, 490 F.2d 981, 985 (CCPA 1974)).

⁷ See Official Action page 7.

⁸ See Takeda Chem. Indus. Ltd. v. Alphapharm Pty., Ltd., 492 F.3d 1350, 1356 (Fed. Cir. 2007).

Finally, Applicants traverse the obviousness rejection on the basis of a superior and unexpected result. As outlined above, Suau employs xanthate salts as chain terminators. Specification page 8, lines 20-21, describes: “xanthic salts give off a nauseous odour, which is found in the synthesized polymer.” Specification page 9, line 22, describes that the inventive homopolymers and/or copolymers, that are not terminated using xanthate salts, employ “non-odorous transfer agents...”. The non-odorous transfer agents used to make the claimed polymer and/or homopolymer do not impart the xanthate salt odor to the claimed homopolymer and/or copolymer. This superior result is not described or suggested by Suau, so based on Suau’s disclosure, this superior result is also an unexpected result. Withdrawal of the rejection is requested on this basis alone.

The obviousness rejection based on Chiefari is traversed. As described above, the homopolymer and/or copolymer of present Claim 1 is terminated at a chain end by a group of formula (I):

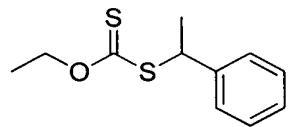


R₁ and M are defined in Claim 1. The Office acknowledges that Chiefari “does not disclose that homopolymers ... and copolymers ... contain at the end of the chain a pattern in accord with formula (I).”⁹ Chiefari does not describe or suggest¹⁰ every feature of present Claim 1 and the claims depending therefrom, so these claims are not obvious in view of Chiefari. Withdrawal of the obviousness rejection is requested on this basis alone.

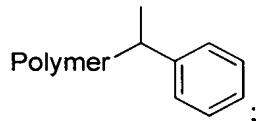
⁹ See Official Action page 10.

¹⁰ “Obviousness requires a suggestion of all limitations in a claim.” See CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing In re Royka, 490 F.2d 981, 985 (CCPA 1974)).

Nevertheless, the Office asserts that based on structural similarity alone, the Claim 1 polymer or homopolymer is obvious in view of Chiefari.¹¹ In Takeda, the Federal Circuit held that in order to make a *prima facie* case of obviousness, in addition to structural similarity, a showing that the “prior art would have suggested making the specific molecular modifications necessary to achieve the claimed invention” was also required.¹² The Office has not made the required showing under Takeda, so the obviousness rejection is improper. Indeed, the chain transfer agents described at Official Action page 9 would not produce the claimed homopolymer or copolymer. For example, Compound C at Official Action page 9 has the following structure:



Compound C, when terminating a polymer in a radical polymerization, would terminate the polymer as follows:



so Compound C, and the other compounds at Official Action page 9, fail to describe or suggest the claimed homopolymer and/or copolymer. Withdrawal of the obviousness rejection is requested on this basis alone.

Finally, Applicants traverse the obviousness rejection on the basis of a superior and unexpected result. As outlined above, Chiefari employs xanthates as chain terminators. As described above, xanthates give off a nauseous odour which is found in the synthesized polymer. Specification page 9, line 22, describes that the inventive homopolymers and/or

¹¹ See Official Action page 11.

¹² See Takeda Chem. Indus. Ltd. v. Alphapharm Pty., Ltd., 492 F.3d 1350, 1356 (Fed. Cir. 2007).

copolymers, that are not terminated using xanthates, employ “non-odorous transfer agents...”. The non-odorous transfer agents used to make the claimed polymer and/or homopolymer do not impart the xanthate odor to the claimed homopolymer and/or copolymer. This superior result is not described or suggested by Chiefari, so based on Chiefari’s disclosure, this superior result is also an unexpected result. Withdrawal of the rejection is requested on this basis alone.

Rejoinder of the withdrawn claims is requested under M.P.E.P. § 821.04.

Applicants submit the present application is now in condition for allowance. Early notification to this effect is earnestly solicited.

Respectfully submitted,

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